

ECOSAN TOILETS: *brief presentation of ecological sanitation access, in the principle of climate change disasters risk reduction, environment sustainability, poverty reduction, users dignity*



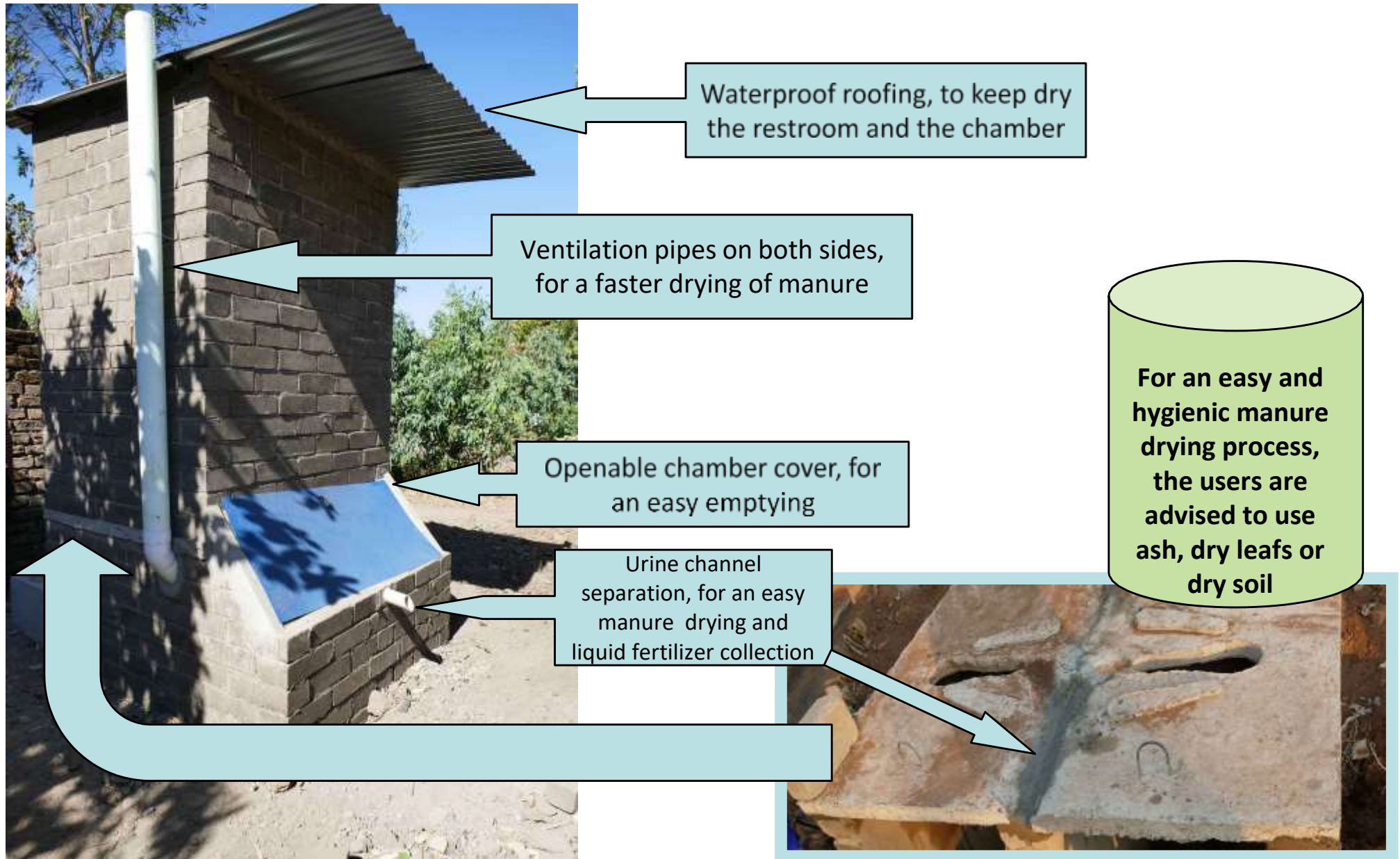
An Ecosan Toilet is a restroom designed for an easy removal of the excreta, which is transformed into manure.

Due to its long durability and characteristics, it is recommended where:

- human faeces could contaminate the water table;
- floods are probable;
- the users are the only reliable persons in charge of emptying the toilet;
- there is no piped water supply;
- low income beneficiaries are in needs of durable, safe, reliable and sustainable access to sanitation;
- there are users in need of reliable fertilizer, without tabu on manure manipulation.

ECOSAN TOILETS:

For an easy management, it is provided by the following elements:



Double slab: one to use, one to close for manure maturation

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ECOSAN TOILETS:

In the principle of environment sustainability, beneficiary involvement and budget saving, it is suggested to build it using Soil Stabilized Bricks SSB



Durable, reliable, sustainable, safe toilet = D.I.G.N.I.T.A.S.

Dignity

Impact

*G*arden improver

Nearby

*I*nfant & child friendly

Tournable

Accessible *S*ustainable



Ecosan Toilet “remains standing” even during the rain season, because it is built using cement and iron base materials.

Unlike the traditional or temporary latrine:

- Since it doesn't collapse after raining, the users will not be forced to hide themselves in the bush for open defecation;
- Privacy and security are more granted, especially for women users.



Previous temporary latrine, partially collapsed. The owner rebuilt it 2/3 times per year, due to the rain and termites

Dignity



**Not anymore
indecent
privacy and
temporary
makeshift
sanitation**





The cost of rebuilding a new temporary toilet = full monthly income of a poor family in the least profitable season*.

Unfortunately, usually the temporary latrines collapse exactly when the income is at the minimum level, that is in the rain season, the furthest period from the harvest season.

As per previous endlines surveys studies** , an Ecosan toilet could help the beneficiaries to save funds for:

- school fees;
- normal family running costs (food, hygiene items, clothes, etc);
- little economical investment (animals, seeds, land rental);

* Source: economic Surveys 2019, available on request

** Source: previous documented baseline-endline surveys and field experience, available on request.



As per previous endlines surveys studies*, an Ecosan toilet could drastically reduce water born diseases, because:

- During the rainy season, the sludge is kept well separated from the aquifer, which provides water to the village's water points;
- The users do not suffer lack of sanitation access in the period between the possible latrine collapse and latrine rebuilding (many days/weeks/months later, according to family funds availability);
- In case of flood, the sludge is not spread to the public areas;
- The distance between the users' body and the sludge is higher.

* source: previous documented baseline-endline surveys and field experience, available on request.

Impact



Not anymore risk of spreading of fecal contamination, sludge in shallow water tables and risks of sludge contact



Garden improver

The Ecosan Toilet is designed to easily transform the human excreta into manure

Manure coming from human excreta and urine is known as effective and safe soil fertilizer. Many publications in international bibliography* confirm that it contains fibers (necessary to retain humidity in the soil), all the three main plants nutrients (Nitrogen, Phosphorus, Potassium), and other minor elements.

The Ecosan Toilet is designed to produce this material in a safe way, due to:

- presence of ventilation pipes, in order to dry as fast as possible the excreta;
- presence of urine separation channel, in order to facilitate the drying of the excreta and to collect the urea as fertilizer;
- chamber door, for an easy manure removal;
- double pit system: one side to use, one side to close for manure maturation.

* Several articles available in ResearchGate website platform



Garden improver

Ecosan Toilet is designed to easily transform the human excreta into manure

Previous documented surveys* have shown that:

- the beneficiaries have reduced the number of bags of syntetic fertilizer, produsing own manure.
- the beneficiaries reported an higher quantity of crops than before;
- the plants health appeared better than before, greener and with bigger fruits/seeds.
- Some unproductive area shifted to fertile garden.



*source: previous documented baseline-endline surveys and field experience, available on request.

Nearby

Ecosan Toilet can be built anywhere, only once

The Ecosan toilet is water proof, it doesn't affect the water table, it can be easily emptied. This means that:

- It can be chosen any area just nearby the house of the beneficiary. The depth of the water table, the slope of the rain water flow, its downstream/upstream position doesn't matter.
- Short distance = more safety, especially for women and at night; more safety = more dignity! No need to wait for the night to pass to go to the toilet...

Infant &

child friendly

Unlike the pit latrines, Ecosan Toilets have a stable cement based chamber. This means that:

- In the rain season, the risk to fall inside instable pits in the event of a possible pit collapsing is cancelled!



- The use of the slabs is the same as other common slabs,
- If used at school: no full pit latrines + no latrine collapsing = lower school dropout, especially for girls,
- The infant excrement can be easily put in the chamber, which avoid the contaminants in the public area.



Ecosan Toilet is reusable

The land occupied by an Ecosan Toilet is fixed, it remains the same for many years, while the traditional pit latrine needs a new area every time the pit is full.

This because it is provided with 2 chambers: one to use and one for the maturation of the future manure.

Both sides of the chamber are sized for about 10 people, for 6 months.

The chamber of an Ecosan Toilet can be easily emptied by a simple shovel, opening a cover sited at eye level.

The emptying of a pit latrine is instead a harder and unsafe job (sometimes even impossible), since it is necessary to dig for about 2 meters below the floor level, the sludge can be semi/fully liquid, it usually needs to break down even the superstructure. Those constraints force the users to build again a new temporary toilet in a new area.

Accessible

The effort required to the beneficiary is similar to the one necessary for a pit latrine

- In general, while the donor can easily support the beneficiaries in terms of expensive material, logistic and skilled labour, the beneficiary can offer basic labour and locally available material. Cash for masonry work and in-kind contribution (digging work, sand and soil, moulding of bricks, etc) can be requested to the beneficiaries, since they are similar to the ones needed for a traditional latrine,
- In case some beneficiaries are vulnerable and unable to offer their labour, the community and the donor can easily support them.

I am the grandmother of four kids who live with me, their parents are working far from here. My community made the necessary bricks to build my toilet



Sustainable

Sustainable development meets the needs of the present generation without compromising the ability of future generation to meet their needs

- Environmental sustainability:
- Unlike classic cooked clay bricks, SSB technology doesn't need any fuel to be cooked, the blocks need to be dried under the shade only;
- SSB technology needs less cement than classic cement blocks, due to the use of soil in the mixture and due to the pressure exerted by the SSB press;
- Ecosan toilets built by SSB are designed to replace wood elements with metal components (even for doors, roof poles, etc);
- While pit latrines need to occupy a new area once it is full, Ecosan latrine needs only one area.

Sustainable

Sustainable development meets the needs of the present generation without compromising the ability of future generation to meet their needs

- **Economic sustainability:**

- Compared to pit latrines, the investment impact for Ecosan toilets is significantly longer and more effective, for both donor and beneficiaries. The lifespan of a cement-iron base toilet can be (under) estimated as 20 years, while for a temporary toilet it can be up to 2 years (if filled without any collapse). In the long term, the budget spent per year per family is lower than the one spent per each pit latrine*.
- The improved soil fertility and the little funds saved by the beneficiaries can help the community and the donor to start a new project cycle focused on new development goals (agriculture, education, nutrition, microcredit, etc). The poverty- emergency - poverty - loop is significantly reduced.
- Ecosan toilet helps the beneficiary to replace syntetic fertilizer with free organic fertilizer and to save family budget from cash not spent for temporary latrines.

* source: previous documented baseline-endline surveys and field experience, available on request.